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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,755	08/26/2003	James N. Guichard	CIS03-34(7598)	7343
58406 7590 09/21/2007 BARRY W. CHAPIN, ESQ. CHAPIN INTELLECTUAL PROPERTY LAW, LLC WESTBOROUGH OFFICE PARK 1700 WEST PARK DRIVE WESTBOROUGH, MA 01581			EXAMINER TRAN, ELLEN C	
			ART UNIT 2134	PAPER NUMBER
			MAIL DATE 09/21/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/649,755	GUICHARD ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Ellen C. Tran	2134	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21, 23-31 and 33-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21, 23-31, and 33-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

*Ellen Tran*  
**ELLEN TRAN**  
**PATENT EXAMINER 2134**

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### ***DETAILED ACTION***

1. This action is responsive to communication: filed on 25 June 2007 with acknowledgement of an original application filed on 26 August 2003.
2. Claims 1-21, 23-31, and 33-51 are currently pending in this application. Claims 1, 11, 21, 31, and 41-45 are independent claims. Claims 21, 31, 43, and 44, have been amended. Claims 22 and 32 have been canceled. Claims 46-51 are new. Amendments to the claims are accepted.

### ***Response to Arguments***

3. Applicant's arguments filed 03 July 2007 have been fully considered however they are moot due to the new grounds of rejection below.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

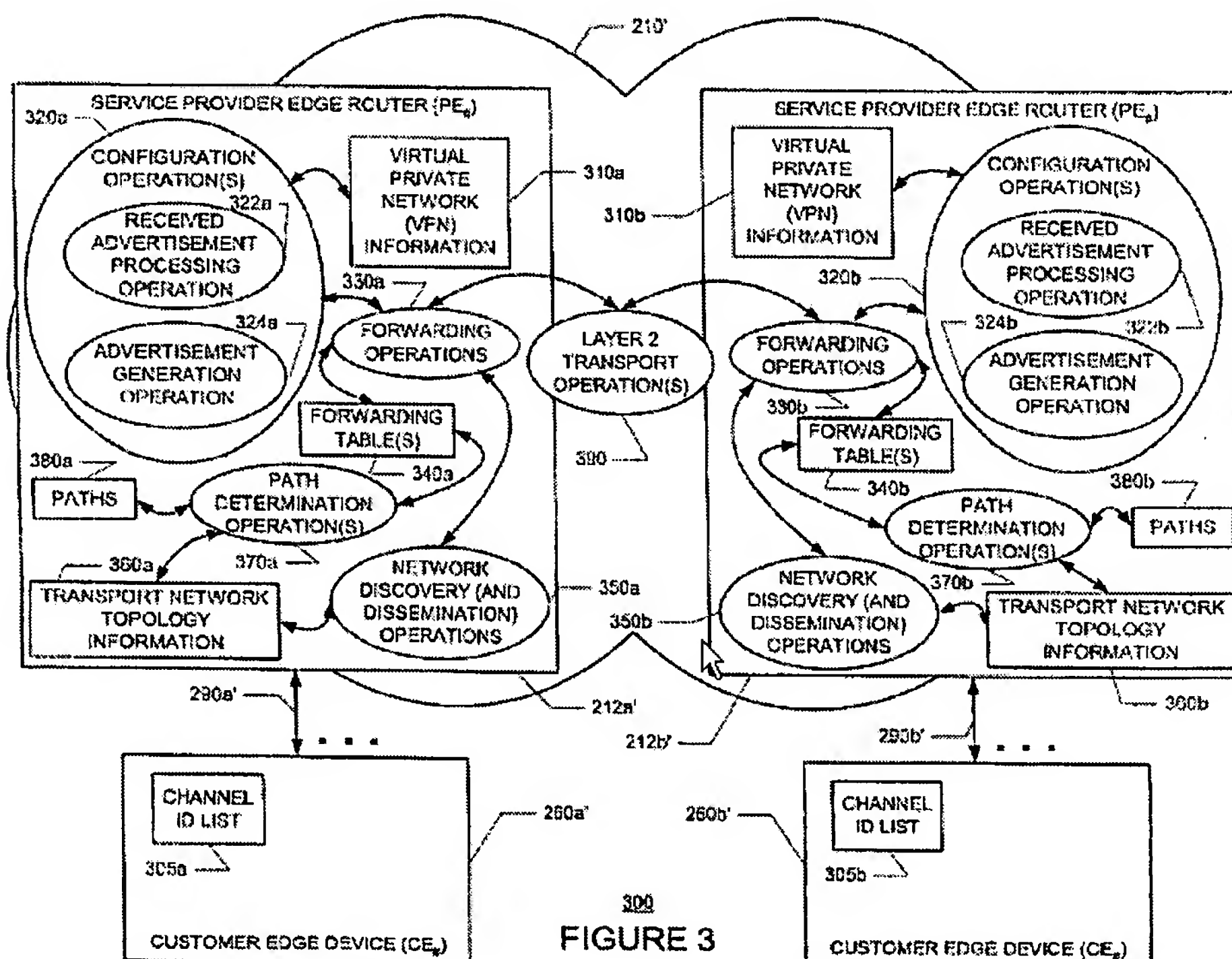
5. **Claims 1-4, 6-9, 11-14, 16-18, 20, 21, 23, 24, 26-28, 30, 31, 33, 34, and 36-50,** are rejected under 35 U.S.C. 102(e) as being anticipated by Kompella US Patent No. 7,136,374 (hereinafter '374).

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As to independent claim 1, “In a first node of a physical network supporting multiple virtual network connections, a method to dynamically modify configuration data supporting virtual networks, the method comprising:” is taught in ‘374 col. 4, lines 14-20 and ‘374 col. 6, lines 25-30;

“receiving i) network address information associated with at least one host computer” the Examiner takes Official Notice that the network address of a host computer is inherent with virtual private network (VPN) communications;

“and ii) a corresponding gateway identifier of a gateway in the physical network generating a notification message including the network address information and the corresponding gateway identifier; and” is shown in ‘374 col. 4, lines 18-27 as well as shown in FIG. 3, which is pasted below, note the notification message is the advertisement;



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**“transmitting the notification message to a second node of the physical network enabling the second node to establish a virtual network connection between the second node and the first node on which to forward data messages to the at least one host computer based on the corresponding gateway identifier”** is disclosed in ‘374 col. 7, lines 40-56, note the ‘destination customer device’ is interpreted to be equivalent to the ‘at least one host computer;.

As to dependent claim 2, **“wherein generating a notification message further comprises: generating at least a portion of the notification message in accordance with a distribution protocol utilized by service providers to disseminate routing policy information to customer edge nodes; and wherein transmitting a notification message includes: transmitting the network address information and the corresponding gateway identifier as an appendix to the notification message”** is taught in ‘374 col. 7, lines 40-50 and col. 9, line 54 through col. 10, line 47..

As to dependent claim 3, **“wherein the distribution protocol is based at least in part on an interautonomous system routing protocol and the virtual network connection between the second node and the first node is a virtual private network connection overlaid on the physical network, one end of the virtual private network connection terminating at the gateway identified by the corresponding gateway identifier”** is shown in ‘374 col. 15, line 44 through col. 16, line 28, note BPG version 4 is an interautonomous routing protocol.

As to dependent claim 4, **“further comprising: transmitting routing policy attribute information in addition to the network address information and corresponding gateway identifier to the second node to more particularly define a policy for routing the data**

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messages on a corresponding virtual network connection through the gateway to the at least one host computer” is disclosed in ‘374 col. 3, lines 45-57 and col. 7, lines 35-56.

As to dependent claim 6, “wherein transmitting the network address and identifier includes: delivering the notification message including the network address and corresponding gateway identifier to multiple customer edge nodes of the physical network, each customer edge node updating its corresponding configuration data for establishing private networks between the customer edge nodes based on the network address and corresponding gateway identifier” is taught in ‘374 col. 7, lines 40-50 as well as FIG. 11 shown below.

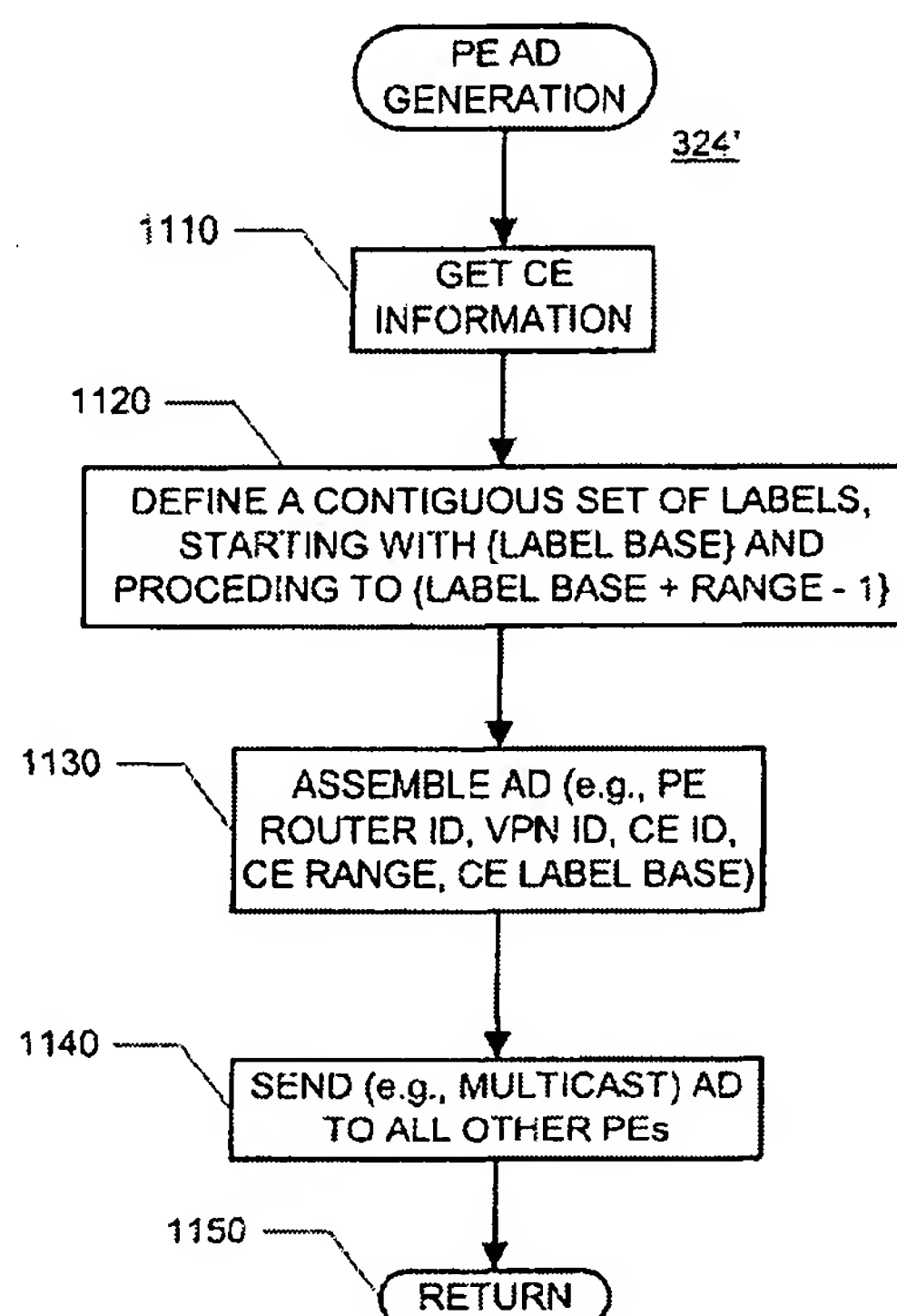


FIGURE 11



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**As to dependent claim 7, “wherein the first and second nodes are customer edge nodes in a network and the network supports virtual private networks terminating at the customer edge nodes”** is shown in ‘373 col. 6, lines 22-33..

**As to dependent claim 8, “wherein the network address information identifies a single host computer”** is disclosed in ‘373 col. 6, lines 25-27.

**As to dependent claim 9, “wherein the network address information identifies a range of host computers that are part of a network coupled to the first node”** is taught in col. 6, lines 23-27, the Examiner takes Official Notice that the ‘range of hosts computer’ is well known with standard communications over and IP network and customer edge devices.

**As to independent claim 11,** this claim is directed to the computer system of the method of claim 1; therefore it is rejected along similar rationale.

**As to dependent claims 12-14, and 16, 18-20,** these claims contain substantially similar subject matter as claims 2-4 and 6-10; therefore they are rejected along similar rationale.

**As to dependent claim 17, “wherein the first and second nodes are customer edge nodes in a network configured according to Request For Comment 2547”** is taught in ‘374 col. 6, lines 22-33.

**As to independent claim 21,** this claim is directed to a receiving node of a physical network as in claim 1, which is rejected along similar rationale;

In addition claim 21 contains the limitation:

**“and upon forwarding data messages through the receiving node, utilizing the map to identify on which virtual network to forward the data messages through the gateway to the destination node”** which is taught in ‘374 col. 7, lines 30-56.

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**As to dependent claim 22, “further comprising: upon forwarding data messages through the receiving node, utilizing the map to identify on which virtual network to forward the data messages through the gateway to the destination node”** is shown in ‘374 col. 7, lines 30-56.

**As to dependent claim 23, “further comprising: at the receiving node including the map, receiving a data message to be forwarded based on a corresponding destination address; comparing the destination address and a source address of the data message to network address information stored in the map; identifying, based on the destination address, how to transmit the data message to the destination node based on a corresponding virtual network connection specified in the map”** is disclosed in ‘374 col. 10, line 49 through col. 11, line 3.

**As to dependent claim 24, “further comprising: in response to identifying that the destination address of the data message matches network address information in the map, establishing the corresponding virtual network connection specified in the map on which to transmit the data message to the destination node”** is shown in ‘374 col. 7, lines 30-56.

**As to dependent claim 26, “further comprising: in response to identifying that the destination address of the data message matches network address information in the map, identifying whether a corresponding virtual network connection specified in the map has been established and, if so, transmitting the data message on the established virtual network connection to the destination node”** is disclosed in ‘374 col. 14, lines 50-64.

**As to dependent claim 27 and 28, these claims contain substantially similar subject matter as claims 8 and 9; therefore they are rejected along similar rationale.**



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**As to dependent claim 30, “wherein the gateway is located in the sending node”** is taught in ‘374 col. 4, lines 14-27.

**As to independent claim 31**, this claim is directed to the computer system of the method of claim 21; therefore it is rejected along similar rationale.

**As to dependent claims 32-34 and 36-40**, these claims contain substantially similar subject matter as claims 22-24 and 26-30; therefore they are rejected along similar rationale.

**As to independent claim 41**, this claim is directed to a computer program performing the method of claim 1; therefore it is rejected along similar rationale.

**As to independent claim 42**, this claim is a means claim performing the method of claim 1; therefore it is rejected along similar rationale. The means to perform the method is shown in the above rejection.

**As to independent claim 43**, this claim is directed to a computer program performing the method of claim 21; therefore it is rejected along similar rationale.

**As to independent claim 44**, this claim is a means claim performing the method of claim 21; therefore it is rejected along similar rationale. The means to perform the method is shown in the above rejection.

**As to independent claim 45**, this claim is directed to customer edge routers that incorporates substantially similar subject matter of the methods of claims 1 and 21; therefore it is rejected along similar rationale.

**As to dependent claim 46, “further comprising: generating a map at the second node based on the network address information and the corresponding gateway identifier of the gateway for routing of messages destined for the at least one host computer via the gateway**

**identifier, the second node supporting forwarding of the messages to the at least one host computer through the gateway as specified by the corresponding gateway identifier” is taught in ‘374 col. 7, lines 30-56.**

**As to dependent claim 47, “wherein transmitting the notification message to the second node includes: transmitting the notification message from a first customer edge node through a path including a service provider network to a second customer edge node, the second customer edge node configured to utilize the network address information and the corresponding gateway identifier to create a map specifying the gateway in the physical network as specified by the corresponding gateway identifier on which to forward messages from the second customer edge node through the service provider network to the first customer edge node to the at least one host computer” is shown in ‘374 col. 7, lines 30-56.**

**As to dependent claim 48, “wherein transmitting the notification message from the first customer edge node through the path including the service provider network to the second customer edge node includes: transmitting the notification message to a first service provider edge router in the service provider network, the first service provider edge router configured to distribute the notification message to multiple other service provider edge routers in the service provider network” is disclosed in ‘374 col. 7, lines 40-50 as well as FIG. 11.**

**As to dependent claim 49, “wherein each of the multiple other service provider edge routers in the service provider network is configured to identify which virtual private network the corresponding gateway identifier is associated with for purposes of advertising the network address information and the corresponding gateway identifier to appropriate**

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**customer edge nodes, a given provider edge router of the other service provider edge routers configured to receive the notification message from the first service provider edge router and forward the network address information and the corresponding gateway identifier to the second customer edge router”** is taught in ‘374 col. 7, lines 30-56

**As to dependent claim 50, “wherein the given service provider edge router is configured to determine a virtual private network to which the notification message pertains based on use of a route target extended community attribute”** is shown in ‘374 col. 8, lines 30-41.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 5, 10, 15, 25, 29, and 51**, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kompella US Patent No. 7,136,374 (hereinafter ‘374) in view of Simon et al. US Patent No. 7,028,183 (hereinafter ‘183).

**As to dependent claim 5**, the following is not taught in ‘374: **“wherein the first and the second nodes are part of a network that does not inherently support encryption services and configuration data at the second node at least partially supports encryption of data messages forwarded to the at least one host computer through the gateway identified by the corresponding gateway identifier”** however ‘183 teaches “Whereas the embodiments which

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have been described are directed toward relocating the IKE negotiation procedure, in yet another embodiment, the IPsec (AH or ESP protocol) processing is moved. This IPsec processing may be located in a node referred to herein as an encryption node or in any one of a plurality of encryption nodes, where the encryption node(s) may be physically separate from the edge routers. Packet filters within the edge routers control which traffic from the end nodes must pass to these encryption nodes and which traffic may pass directly (and therefore without encryption through the IPsec tunnel) to the destination hosts. In some configurations, these packet filters therefore can reduce the amount of traffic that must pass through the encryption nodes, thereby reducing the overall cryptographic load. This is in contrast to the prior art, in which the end node either transmits all data through the IPsec tunnel or in which the end node is solely responsible for selecting which traffic passes through the IPsec tunnel encryption. In particular, the packet filters within the edge routers enable the network to enforce cryptographic policies without relying on the proper configuration of the end nodes. In this embodiment, the encryption nodes may be co-located with cryptographic node processing thus providing the functionality of a conventional IPsec endpoint” in col. 9, lines 21-45.

It would have been obvious to one of ordinary skill in the art at the time of the invention a virtual private network enabled to dynamically distribute VPN information taught in ‘374 to include a means to use nodes that do not inherently support encryption. One of ordinary skill in the art would have been motivated to perform such a modification because of the complexity introduced by a wireless environment see ‘183 (col. 4, lines 6 et seq.) “A particular difficulty for a distributed or clustered IPsec implementation is distribution of cipher keys. Two serious problems arise. First, for IKE negotiation to succeed, all of the IKE packets for establishing the

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SA must arrive at the same physical node (e.g. edge router); otherwise no SA will be negotiated and no encrypted traffic can ever be exchanged ... Second, once IKE negotiation has produced one or more SAs, those SAs must be made available to every node (e.g. edge router) that can transmit or receive traffic using the associated IP address. That is, the SAs (and their associated cipher keys, ESP parameters, and AH parameters) need to be available at any edge router to which a mobile wireless end node's traffic is directed, in order for the collection of edge routers to provide seamless yet secure connectivity for the mobile end node. Otherwise, packets may arrive at nodes at which they cannot be decrypted /encrypted or authenticated, resulting in severe problems including significant packet loss and communication breakdown, and in turn, an increase in network latency and a decrease in network throughput”.

**As to dependent claim 10, “wherein the corresponding gateway identifier is an IPsec identity associated with the at least one host computer”** however ‘183 teaches IPsec associations in col. 3, lines 41-51. The motivation to combine ‘374 and ‘183 is the same as stated above in claim 5.

**As to dependent claim 15 and 29,** these claims contain substantially similar subject matter as claims 5 and 10; therefore they are rejected along similar rationale.

**As to dependent claim 25, “wherein establishing a virtual network connection includes establishing a virtual private network connection between the receiving node and sending node based on IKE (Internet Key Exchange) protocol and IPsec (Internet Protocol Security)”** however ‘183 teaches IKE key exchange in col. 3, lines 41-44. The motivation to combine ‘374 and ‘183 is the same as stated above in claim 5.

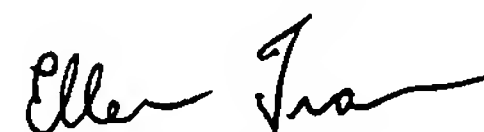
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**As to dependent claim 51, further comprising maintaining at least one encryption key in the map to enable the second customer edge node to identify how to encrypt information transmitted to the at least one host computer”** however ‘183 teaches that the edge routers both encrypt and decrypt traffic sent and received, obviously to perform the encryption and decryption the edge node contains at least one encryption key in col. 4, lines 42-55. The motivation to combine ‘374 and ‘183 is the same as stated above in claim 5.

### *Conclusion*

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen C Tran whose telephone number is (571) 272-3842. The examiner can normally be reached from 7:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Kambiz Zand can be reached on (571) 272-3811. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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13 September 2007